



6L6-GB

BEAM POWER TUBE

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GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage 6.3 ac or dc volts
Current 0.9 amp

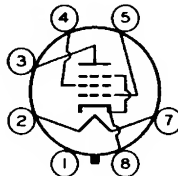
Direct Interelectrode Capacitances (Approx.):^o

Grid No.1 to plate. 0.9 $\mu\mu\text{f}$
Grid No.1 to cathode & grid No.3,
grid No.2, and heater 11.5 $\mu\mu\text{f}$
Plate to cathode & grid No.3,
grid No.2, and heater 9.5 $\mu\mu\text{f}$

Mechanical:

Mounting Position Any
Maximum Overall Length. 4-1/4"
Maximum Seated Length 3-11/16"
Maximum Diameter. 1-9/16"
Bulb. T12
Base. Medium-Shell Octal 7-Pin (JETEC No.B7-12),
Short Medium-Shell Octal 7-Pin
with External Barriers, Style A (JETEC No.B7-111),
or Short Medium-Shell Octal 7-Pin
with External Barriers, Style B (JETEC No.B7-119)
Basing Designation for BOTTOM VIEW. 7AC

Pin 1 - No Connection
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid No.2



Pin 5 - Grid No.1
Pin 7 - Heater
Pin 8 - Cathode,
Grid No.3

AF POWER AMPLIFIER - Class A₁

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE 360 max. volts
GRID-No.2 (SCREEN-GRID) VOLTAGE 270 max. volts
GRID-No.2 INPUT 2.5 max. watts
PLATE DISSIPATION 19 max. watts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode . . 180 max. volts
Heater positive with respect to cathode . . 180 max. volts

Typical Operation and Characteristics:

Fixed-Bias Operation

Plate Voltage 200 250 300 350 volts
Grid-No.2 Voltage 200 250 200 250 volts
Grid No.1 (Control-Grid)
Voltage -11.5 -14 -12.5 -18 volts

^o Without external shield.

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Peak AF Grid-No.1 Voltage. . .	11.5	14	12.5	18	volts
Zero-Signal Plate Current. . .	52	72	48	54	ma
Max.-Signal Plate Current. . .	57	79	55	66	ma
Zero-Signal Grid-No.2 Current.	3.5	5	2.5	2.5	ma
Max.-Signal Grid-No.2 Current.	5.7	7.3	4.7	7	ma
Plate Resistance (Approx.) . .	35000	22500	35000	33000	ohms
Transconductance	5300	6000	5300	5200	μ mhos
Load Resistance.	3000	2500	4500	4200	ohms
Total Harmonic Distortion. .	9	10	11	15	%
Max.-Signal Power Output . .	4	6.5	6.5	10.8	watts

Cathode-Bias Operation

Plate-Supply Voltage	200	250	300	volts
Grid-No.2 Supply Voltage . . .	200	250	200	volts
Cathode Resistor	186	167	218	ohms
Peak AF Grid-No.1 Voltage. . .	11.5	14	12.7	volts
Zero-Signal Plate Current. . .	55	75	51	ma
Max.-Signal Plate Current. . .	56	78	54.5	ma
Zero-Signal Grid-No.2 Current. .	4.2	5.4	3	ma
Max.-Signal Grid-No.2 Current. .	5.6	7.2	4.6	ma
Load Resistance.	3000	2500	4500	ohms
Total Harmonic Distortion. . .	9	10	11	%
Max.-Signal Power Output . . .	4	6.5	6.5	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For fixed-bias operation	0.1 max. megohm
For cathode-bias operation	0.5 max. megohm

AF POWER AMPLIFIER - Class A₁*Triode Connection - Grid No.2 Connected to Plate***Maximum Ratings, Design-Center Values:**

PLATE VOLTAGE.	275 max.	volts
PLATE DISSIPATION.	19 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	180 max.	volts
Heater positive with respect to cathode.	180 max.	volts

Typical Operation and Characteristics:

	<i>Fixed Bias</i>	<i>Cathode Bias</i>	
Plate-Supply Voltage	250	250	volts
Grid-No.1 (Control-Grid) Voltage	-20	-	volts
Cathode Resistor	-	490	ohms
Peak AF Grid-No.1 Voltage. . .	20	20	volts
Zero-Signal Plate Current. . .	40	40	ma
Max.-Signal Plate Current. . .	44	42	ma
Plate Resistance (Approx.) . . .	1700	-	ohms



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	Fixed Bias	Cathode Bias	
Amplification Factor	8	—	
Transconductance	4700	—	μ mhos
Load Resistance	5000	6000	ohms
Total Harmonic Distortion	5	6	%
Max.—Signal Power Output	1.4	1.3	watts
Maximum Circuit Values:			
Grid-No.1—Circuit Resistance:			
For fixed-bias operation		0.1 max.	megohm
For cathode-bias operation		0.5 max.	megohm
PUSH-PULL AF POWER AMPLIFIER - Class A₁			
Maximum Ratings, Design-Center Values:			
PLATE VOLTAGE		360 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE		270 max.	volts
GRID-No.2 INPUT		2.5 max.	watts
PLATE DISSIPATION		19 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode.		180 max.	volts
Heater positive with respect to cathode.		180 max.	volts
Typical Operation and Characteristics:			
<i>Unless otherwise specified, values are for 2 tubes</i>			
	Fixed Bias		Cathode Bias
Plate Voltage	250	270	250 270 volts
Grid-No.2 Voltage	250	270	250 270 volts
Grid-No.1 Voltage	-16	-17.5	— — volts
Cathode Resistor	—	—	124 124 ohms
Peak AF Grid-No.1-to—			
Grid-No.1 Voltage	32	35	35.6 28.2 volts
Zero-Signal Plate Current	120	134	120 134 ma
Max.—Signal Plate Current	140	155	130 145 ma
Zero-Signal Grid-No.2			
Current	10	11	10 11 ma
Max.—Signal Grid-No.2			
Current	16	17	15 17 ma
Plate Resistance (Approx.,			
per tube)	24500	23500	— — ohms
Transconductance .			
(Per tube)	5500	5700	— — μ mhos
Effective Load Resistance			
(Plate to plate)	5000	5000	5000 5000 ohms
Total Harmonic Distortion	2	2	2 2 %
Max.—Signal Power Output	14.5	17.5	13.8 18.5 watts
Maximum Circuit Values:			
Grid-No.1—Circuit Resistance:			
For fixed-bias operation		0.1 max.	megohm
For cathode-bias operation		0.5 max.	megohm

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PUSH-PULL AF POWER AMPLIFIER - Class AB₁

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE	360 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	270 max.	volts
GRID-No.2 INPUT	2.5 max.	watts
PLATE DISSIPATION	19 max.	watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode .	180 max.	volts
Heater positive with respect to cathode .	180 max.	volts

Typical Operation:

Values are for 2 tubes

	Fixed Bias		Cathode Bias	
Plate Voltage	360	360	360	volts
Grid-No.2 Voltage	270	270	270	volts
Grid-No.1 (Control-Grid)				
Voltage*	-22.5	-22.5	-	volts
Cathode Resistor	-	-	248	ohms
Peak AF Grid-No.1-to-				
Grid-No.1 Voltage . . .	45	45	40.6	volts
Zero-Signal Plate Current .	88	88	88	ma
Max.-Signal Plate Current .	132	140	100	ma
Zero Signal Grid-No.2				
Current	5	5	5	ma
Max.-Signal Grid-No.2				
Current	15	11	17	ma
Effective Load Resistance				
(Plate to plate)	6600	3800	9000	ohms
Total Harmonic Distortion	2	2	4	%
Max.-Signal Power Output .	26.5	18	24.5	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:*

For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB₂

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE	360 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	270 max.	volts
GRID-No.2 INPUT	2.5 max.	watts
PLATE DISSIPATION	19 max.	watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode .	180 max.	volts
Heater positive with respect to cathode .	180 max.	volts

* The type of input coupling used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.



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Typical Operation:

Values are for 2 tubes

Plate Voltage.	360	360	volts
Grid-No.2 Voltage.	225	270	volts
Grid-No.1 (Control-Grid) Voltage	-18	-22.5	volts
Peak AF Grid-No.1-to-			
Grid-No.1 Voltage.	52	72	volts
Zero-Signal Plate Current.	78	88	ma
Max.-Signal Plate Current.	142	205	ma
Zero-Signal Grid-No.2 Current.	3.5	5	ma
Max.-Signal Grid-No.2 Current.	11	16	ma
Effective Load Resistance			
(Plate to plate)	6000	3800	ohms
Total Harmonic Distortion.	2	2	%
Max.-Signal Power Output	31	47	watts

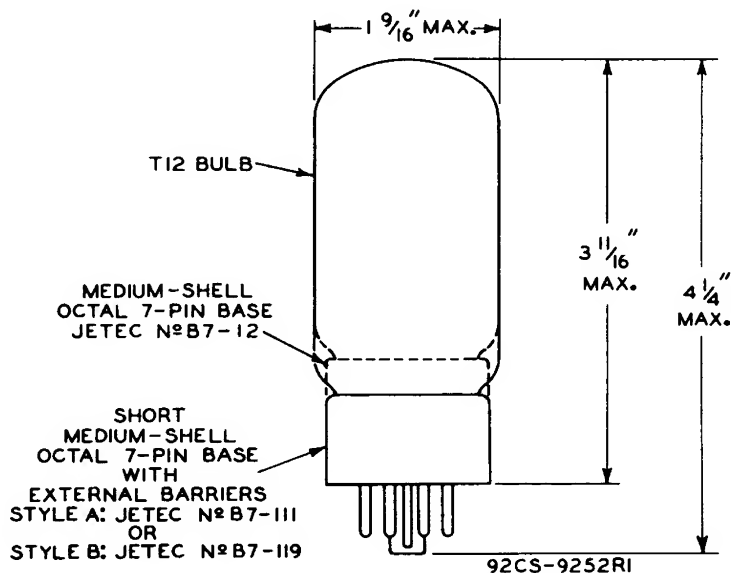
Maximum Circuit Values:

Grid-No.1-Circuit Resistance:▲

For fixed-bias operation 0.1 max. megohm

For cathode-bias operation Not recommended

▲ Driver stage should be capable of supplying the specified driving power at low distortion to the No.1 grids of the AB₂ stage. To minimize distortion, the effective resistance per grid-No.1 circuit of the AB₂ stage should be held at a low value. For this purpose, the use of transformer coupling is recommended.

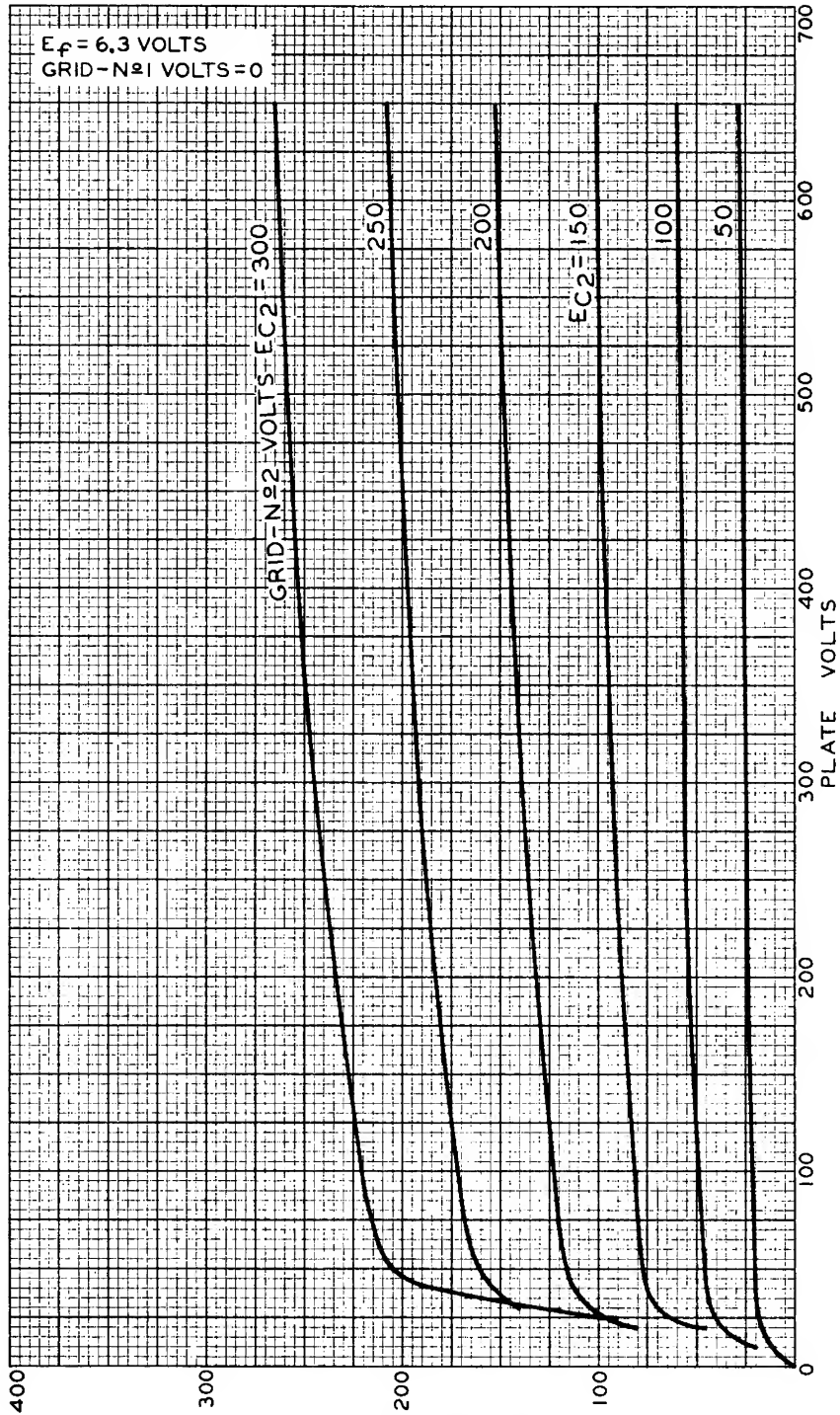


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AVERAGE PLATE CHARACTERISTICS



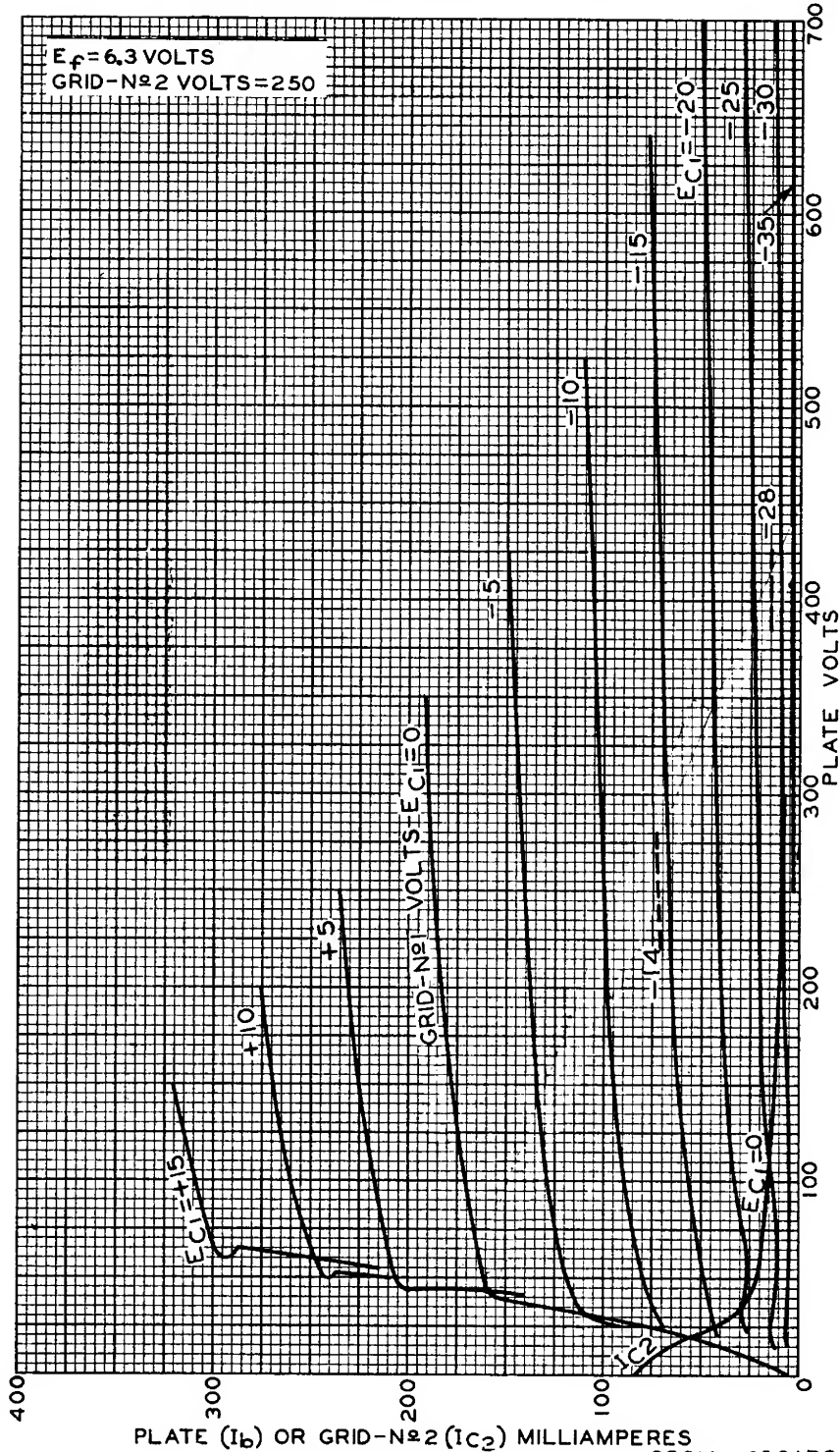
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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-4580 R2



6L6-GB AVERAGE CHARACTERISTICS

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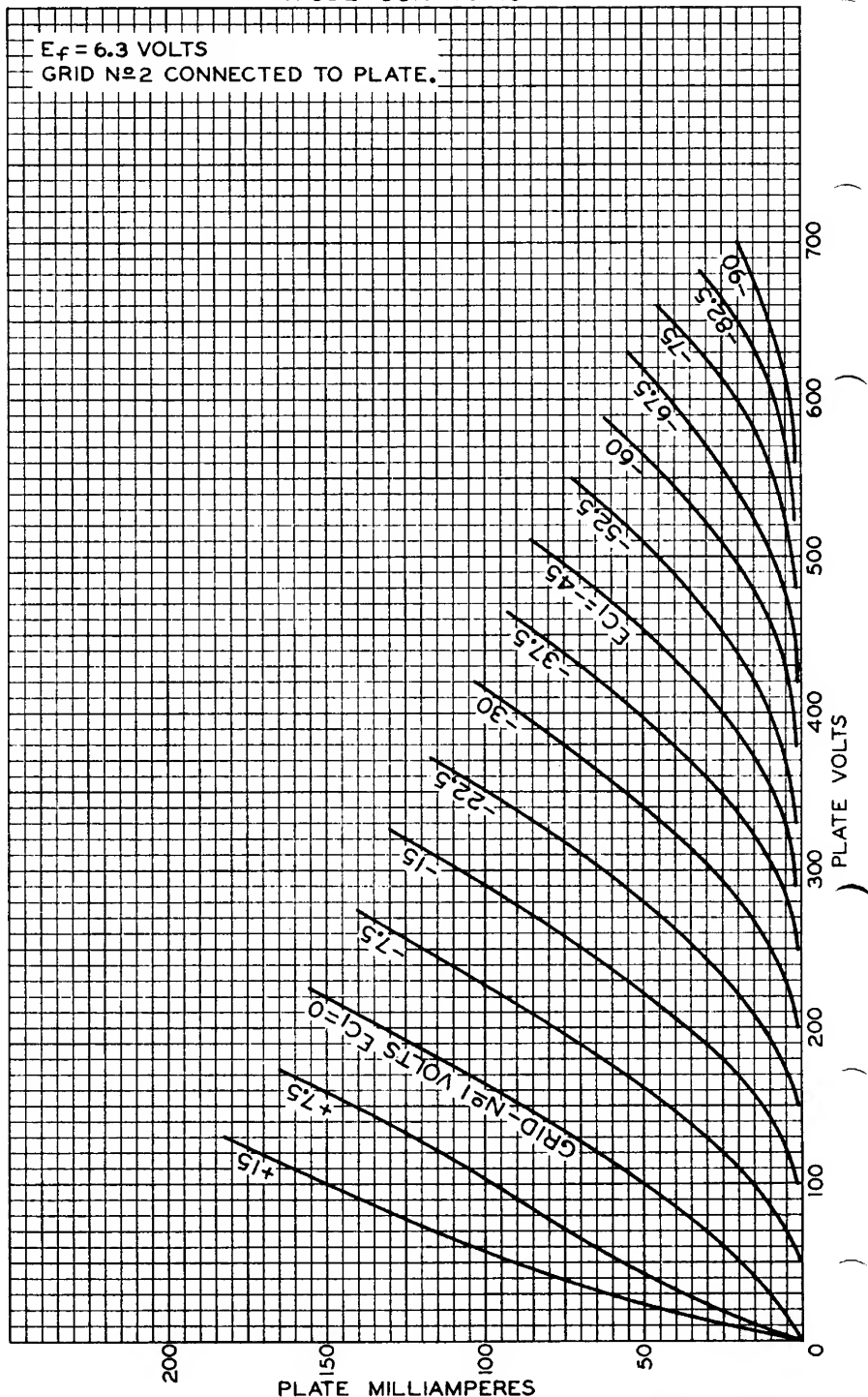
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AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION



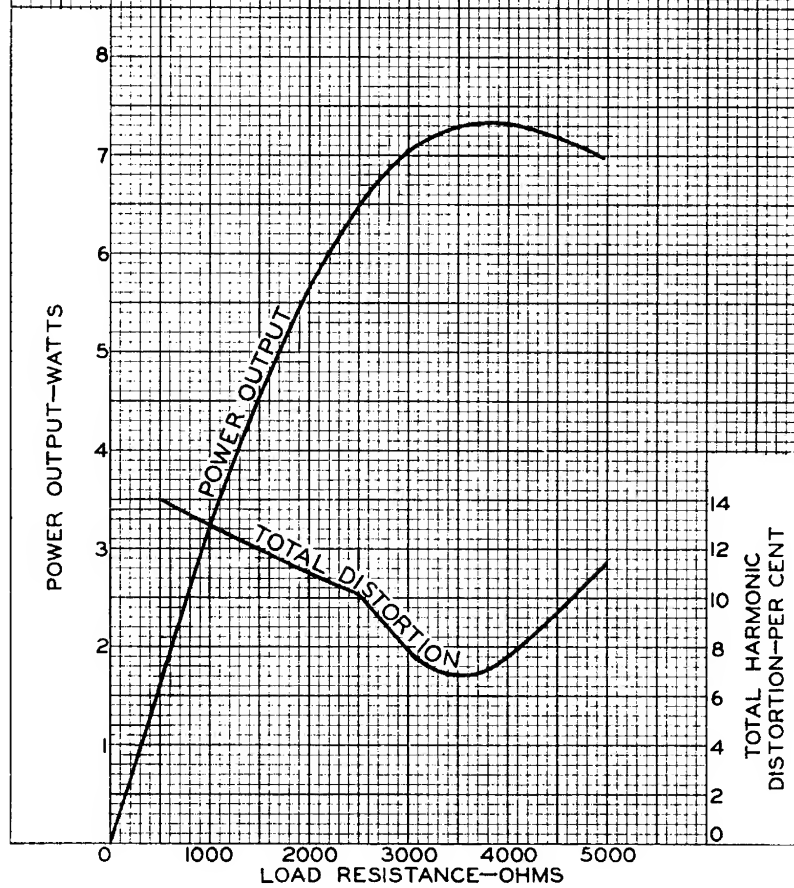


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OPERATION CHARACTERISTICS

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$E_f = 6.3$ VOLTS
PLATE VOLTS = 250
GRID-N₂ VOLTS = 250
GRID-N₁ VOLTS = -14
SIGNAL VOLTS (RMS) = 10



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92CM-4608R1